

## MISCELLANEOUS NOTES

### FOOD HABITS OF THE INDIAN WILD DOG (*CUON ALPINUS*): A PRELIMINARY ANALYSIS

From October through December of 1975, one hundred and fifty (150) droppings of wild dogs (*Cuon alpinus*) were collected from within an area of twenty four (24) square miles in and around the eastern entrance of the Mudumalai Wildlife Sanctuary in Tamil Nadu. The study area was bounded by the Kalhatty slope to the east, the village of Masinigudi to the west, Anaikatti to the north, and Bokapur to the south.

This region of the Nilgiris lies at an altitude of between 3000 and 3500 feet and is characterized by low scrub jungle, interspersed with stands of bamboo surrounding the larger waterways. Cultivation is common and occurs at fairly regular intervals throughout the study area. At the time of collection, the north-east monsoon was well under way, providing moisture necessary for the rapid growth of lush vegetation. Consequently, the animal life, large and small was abundant.

As the wild dog typically whelps from November through February (Cohen 1977), only

yearling and adult dogs are assumed to have contributed to our sample.

Identification of fecal content was made using hair samples, bone fragments, vegetation, and insect parts found in each bolus. For this preliminary analysis, unknown hair samples were compared by gross visual inspection with similar samples collected from known species at the Bombay Natural History Society. A more detailed hair follicle analysis, based on microscopic techniques will be reported elsewhere. Bone fragments were identified by A.J.T. Johnsingh and K. Paramantham of the Ayya Nadar Janaki Ammal College in Sivakasi, Tamil Nadu. Assistance in the identification of vegetational types was kindly given by Dr. M. Joseph, Regional Botanist of the Botanical Survey of India at Coimbatore, Tamil Nadu.

The food items represented in the droppings, the number of times each item occurred, and their frequency percentage in the sample are shown in Table 1.

TABLE 1

DIET OF THE INDIAN WILD DOG (*Cuon alpinus*) AS DETERMINED BY FECAL ANALYSIS OF 151 DROPPINGS

Item	Times occurring	Frequency percentage
Spotted Deer ( <i>Axis axis</i> )	62	41
Sambar ( <i>Cervus unicolor</i> )	10	7
Wild Pig ( <i>Sus scrofa</i> )	3	2
Mouse Deer ( <i>Tragulus meminna</i> )	1	0.7
Blacknaped Hare ( <i>Lepus nigricollis</i> )	53	35
Rodentia	17	11
Unidentified Mammal	11	7
Domestic livestock	1	0.7
Insecta	9	6
Fruits	2	1
Grasses & Vegetation	71	47

A similar collection of 138 droppings was made by Dr. Michael Fox and A. J. T. Johnsingh in December through February, 1974 and will be cited in the following discussion. These results are summarized in Table 2.

relative food abundance. It was reported to these investigators by the Forest Ranger at Theppakadu that the estimated chital population in the Sanctuary in 1975 was approximately 1750 animals (by pellet count), while

TABLE 2

DIET OF THE INDIAN WILD DOG (*Cuon alpinus*) AS DETERMINED BY FECAL ANALYSIS OF 138 DROPPINGS

Item	Times occurring in adult faeces	Times occurring in pup faeces	Total freq. %
Spotted Deer ( <i>Axis axis</i> )	102	5	78
Sambar ( <i>Cervus unicolor</i> )	13	0	9
Wild Pig ( <i>Sus scrofa</i> )	1	0	0.7
Small Mammals (lagomorphs, rodents)	12	2	10
Domestic Livestock	3	0	2

*Iseilema prostratum* grass common in faeces

Segments of tapeworm, *Taenis hydatigena* frequent in scats.

#### DISCUSSION

##### Mammals :

Spotted deer (*Axis axis*) exceeded all other items in the diet, except grasses. They were six per cent (6%) more frequent in the droppings than hare remains. That these animals are the chief staple in the diet is thus reaffirmed. In those scats able to be identified as such, chital fawns outnumbered adults as prey by almost three-to-one (3:1). Sambar comprised a relatively small part of the diet (7%). Fox and Johnsingh (1975) also found spotted deer remains in seventy-eight per cent (78%) of the samples they collected from the same area in January and February of 1974, compared to only nine per cent (9%) sambar. There may be several explanations for this observed preference of chital in the diet. There is a great size difference between sambar and chital and, given the fact that the dogs usually hunt in groups of three to five individuals, a full-grown sambar may present too much of a risk to the predator, especially in times of

the sambar population numbered only about 200. These facts and the additional fact that Sambar are relatively solitary in their habits as opposed to the chital, who tend to congregate in herds of up to 250 animals in the evening, before breaking up into smaller foraging groups during the daylight hours, may help to explain our observed results. Periods of hunting activity in the wild dog correlate well with the observed increase in the sizes of chital herds in early evening and early morning hours.

The remains of wild pig, a common inhabitant of the region, occurred in only two per cent (2%) of the sample. Mouse deer (*Tragulus meminna*) for Indian Chevrotain also play a very minor role in the wild dog's diet, comprising only seven-tenths of one per cent (0.7%). This may be expected due to the rarity of this species in the region.

Blacknaped hare ranked next to chital in relative frequency of occurrence (35%). This correlates well with the observed abundance of this species of lagomorph in the study area.

No other lagomorph species occurs in the area of the Mudumalai.

Eleven per cent (11%) of the fecal samples contained members of the class *Rodentia*.

In the present study, hare and rodents comprised forty-six per cent (46%) of the wild dog's diet. Johnsingh and Fox, in 1974 found all small mammals to make up only ten per cent (10%) of the total diet. It must be taken into consideration, however, that while the present collection was made at the end of the monsoon season, the other was made at the height of the dry season. Due to the extreme ground temperatures, lack of cover, scarcity of water, and reduced availability of food, a reduction of small mammal activity and a probable reduction in population sizes of such animals would subsequently result in a reduction in the frequency of these prey items in the dogs' diet.

According to analysis of fecal samples, domestic livestock comprised only seven-tenths of one per cent (0.7%) of the dogs' total diet. This is most interesting in light of the fact that the wild dog is still considered to be a "pest", with bounties awarded for its extermination. M. Krishnan (1972) states that wild dogs rarely take domestic stock as prey. Although this statement is reaffirmed in the present study and from the collection and analysis made by Fox and Johnsingh (op. cit.), who found livestock remains in only two per cent (2%) of their sample. Fox, found, upon asking paddy owners, that nearly seven per cent (7%) of their cattle losses are attributed to wild dogs. It is possible that in times of scarce food supply, the wild dogs turn to domestic stock, which is plentiful in the region, for food. Other possibilities also exist. Among those is the possibility that the actual kills are not witnessed by the paddy owner, but merely the loss of an animal is automatically attri-

buted to the wild dog. Indeed there seems to be some disparity between observed proportions of cattle in the wild dogs' diet and their reputed effect on livestock numbers in the area. By studying the food habits of the wild dog in relation to that of the leopard, tiger, and pariah (pie) dog (*Canis familiaris*), a recently introduced predator, a true picture of the wild dogs' role in the region's ecology could be gained. The common attitude of the wild dog as a "pest" to be exterminated requires intensive re-examination.

The remaining animal matter found in the feces (7%) were unidentifiable due to the condition of the scats themselves. The age of the dropping (e.g. calcification of contents) and the quantity recovered prevented any definite identification of the hair samples.

#### Miscellaneous :

Insects appeared in only six per cent (6%) of the droppings. The majority of these were identified as beetles (from elytra and wings). It is not known if these animals were purposefully eaten or perhaps entered the feces after being deposited. Fruit of the *Zizyphus* genus was found in one per cent (1%) of the sample. Although this seasonal fruit seems to serve as a food source for many of the mammalian and avian herbivores of the area, it does not appear to be an important supplement in the diet of the wild dog.

The most frequent item found in the feces of the wild dog was grass and vegetation. Although only two of the one hundred and fifty-one droppings were totally vegetable in content, occurrence in all other cases appeared incidental to the existence of animal matter. The following grasses were identified: *Heteropogon contortus*, *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Cynodon barberi*, *Aristida hystrix*, and *Eragrostis bifaria*.

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## 2. OBSERVATION ON CARNIVOROUS HABIT OF AN IRRAWADDY SQUIRREL, *CALLOSCIURUS PYGERYTHRUS* (GEOFFROY)

During a trip to North Lakhimpur, Assam, in October 1976, an interesting behaviour of the Irrawaddy Squirrel, *Callosciurus pygerythrus* (Geoffroy), was noted.

On October 15th 1976 at about 8.00 hours, I noticed the animal eating the fruit of an Olive tree (*Olea europaea*) in a small orchard (about an acre in area) having a pond and other trees, namely Embelic (*Embelica officinalis*) in fruit, shrubs such as Lemon (*Citrus lemon*) and undergrowth mainly of Pineapple (*Ananas sativus*) and other fruit-bearing herbs, just behind the house where I was camped. The squirrel slipped away when an attempt

at closer observation was made. On that very day at about 16.00 hours, the cackling call of a squirrel was heard, but unfortunately, it could not be traced. The following day two mongooses were seen busily digging the earth beside the pond. With a view to catching them, two traps were set in the bushes at about 13.00 hours with intestine of chicken as bait. After about two hours, to my great surprise I found that an Irrawaddy Squirrel, instead of a mongoose, had been trapped. It was still feeding on the bait. The squirrel was allowed to consume the whole of the bait without being disturbed.